

THE ADAPTATION OF SPATIAL QUALITIES OF JAPANESE GARDENS IN
DESIGN OF CONTEMPORARY OUTDOOR SPACES

by

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To my sister, who encouraged me to
hang in when I was about to give up.



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日本在园



THE ADAPTATION OF SPATIAL QUALITIES

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INTRODUCTION

Traditional Japanese gardens are loved by the Americans as well as by the Japanese. They have been reproduced within many botanical gardens in the United States to display the beauty of an exotic art. In the field of landscape architecture, Japanese garden designs have been adapted in various types of contemporary landscape design.

Japanese gardens are favored because they have certain qualities that cannot be experienced in western gardens. Japanese gardens were and are an expression of religious and philosophical orientations and attitudes toward nature. Each type of Japanese garden had its own unique purpose and meaning, and each garden reflects the culture of the particular era in which it was created. Regardless of types, Japanese gardens are spiritual and passive in character. They are places for meditation where no physical activity take place. The value of Japanese gardens is found in mental participation of the user.

In contrast, western gardens are spaces for activity and practical use. They serve as outdoor living rooms; "useful spaces for living, playing, working, and dynamic space to be viewed" (Messenger, 1977).

Every space has its own character. When we enter into a space, we experience a certain spatial quality, a sensation evoked by qualities of objects within the space, relationship between objects, and, relationship between objects and space.

Interrelation of objects result in creating other attributes of each object and the space which contains them. Therefore, the same object will give different impressions when it is placed in a different space with different objects. The phrase, "the whole is greater than the sum of the parts" sums up the definition of spatial quality.

Despite the difference in fundamental character of space usage, spatial qualities of Japanese gardens are observed in contemporary outdoor space design; not only for private residential gardens, but also for public spaces where more activity has to be accommodated. Japanese spatial qualities, although they are unique to Japanese landscape and history, are appropriate in some of the successful contemporary outdoor spaces.

What is it that makes the Japanese spatial qualities fit in different time and space? Are these qualities presented in the same manner as they are done so, in Japanese gardens? In order to answer these questions, spatial qualities in both Japanese gardens and contemporary outdoor spaces need to be analyzed; but, how can spatial qualities be analyzed?

Lynch and Hack state in Site Planning (1984);

The sensed quality of a place is an interaction between its form and its perceiver....The designer shapes his form so that it will be a willing partner in that sensed interaction, helping the perceiver to create a coherent, meaningful, and moving image. (p. 153)

Physical qualities of objects in a space and association we make when we perceive the object dictate the spatial qualities. Objects of different physical characteristics evoke different sensations. An object will give different impression when one of the following is presented in different character; color, form and texture. For example, fine textured plants appear soft and delicate, while coarse textured plants appear rather rough and strong.

By applying this theory to this research, it may be assumed that if objects of the same qualities were used in the same relationship in contemporary settings as they are in Japanese gardens, we should be able to experience the same spatial qualities.

This research of spatial qualities is based on this theory. First I identified the visual design aspects that are unique to Japanese gardens. This was done by synthesizing the following; characterizations of Japanese gardens written by four landscape architects, author's observations on Japanese gardens ¹, and literature reviews. Secondly, I examined how each object in Japanese gardens is used to present the design aspects which express Japanese spatial qualities.

Using this analysis as a yardstick, I examined which objects and how they contribute in presenting Japanese

¹. Observations were made by visiting Japanese gardens and reviewing published photographs.

spatial qualities in contemporary outdoor spaces. Landscape designs that were examined in this research included a residential, commercial, institutional landscaping, and urban plazas in the United States, and an urban street-scape in Japan.

A generalization was made in order to answer the question; "How are Japanese spatial qualities expressed in contemporary outdoor spaces?" Correlations between spatial qualities, design aspects and conditions of the space (requirements and limitations) are also discussed.

It is intended that this research will assist amateur landscape designers in understanding the theory and principles behind the creation of spatial qualities experienced in Japanese gardens. I also hope that such spatial qualities will be successfully adapted in appropriate projects.

CHAPTER 1
An Isolated Country

Man has formed cultures by responding to a certain set of forces present in a given geographic locale. Although culture responds to perceptions about, and values assigned to aspects of their habitat, similarities exist among cultures in different natural environments. Attributes of Western, Middle-Eastern, and Far-Eastern cultures have been repeatedly diffused by migration, commerce, and wars. Japan, however, had been excluded from this process of cultural diffusion for many centuries. It was not until middle of the nineteenth century when Japan started to interact with the rest of the world. Why was there hardly any interaction with western cultures before this time?

When the country came into existence some two thousand years ago, the islands of Japan were already detached from the Eurasian Continent. Japan lies in the Pacific Ocean, paralleling the northeastern coast of China (figure 1). Ocean surrounded the islands of Japan, and seasonal typhoons had been a factor in limiting the access of foreign ships to the Japanese coasts. For hundreds of years, the Japanese experienced only occasional contact with the neighboring countries of China and Korea. The Japanese absorbed some facets of Chinese culture by way of Korea. Through the long course of their history, however, the Japanese have nourished



Figure 1. The geographic isolation of Japan by surrounded ocean.

their own culture which is quite different from Chinese culture.

After centuries of geographic isolation, the first group of foreign traders, the Dutch, finally landed on one of the southern Japanese islands in the mid-sixteenth century. Their purpose was to establish economic relations with Japan. At this time, Christian missionaries also landed on a southern island and began a mission, especially among the poor. The Christians established a strong organization in a short period of time. As the number of Christians increased, the Tokugawa Shogunate, the ruling regime at that time, foresaw the threat of revolutions against the feudal system by the Christian group. Officials of Tokugawa Shogunate closed all harbors to most of the foreign traders, banned Christianity, and punished the Christians until they gave up their religion. Japan closed its door to western countries until 1854, when Commodore Perry of the United States forced Japan to put an end to the long political isolation. (Inoue, et al., 1973)

Centuries of geographic isolation and 214 years of political isolation had insulated Japanese culture from western cultures. This situation resulted in the development of a unique quality of Japanese culture which essentially evolved its own forms based on particular perspective on the oriental religious philosophies and close attachment to natural environment.

Japanese culture evolved with changes in the political organization, changes in economic and social conditions, and as new religious philosophies came in from China. As the culture evolved, garden art has also evolved. Japanese garden types evolved around the people with economic power, political power and respected social status at the time. The garden design has always reflected religious philosophies that were widely accepted by people. The Japanese instinct of being close to nature is deeply rooted in their religion, Shintoism. The instinct was reinforced by the Buddhism philosophies which admonish that man is part of nature, and which encouraged the enjoyment and appreciation of natural beauty (Oldham, 1985). The love of nature has always been present in garden designers, hence the natural quality always dominated the space in Japanese gardens.

CHAPTER 2

Evolution of Japanese Gardens

Religions and Gardens

The Japanese love of nature is rooted in the rise of their indigenous religion, Shintoism. Japanese gardens first started from a very simple garden consisting of a pond and grouped rocks.

The first Japanese garden was created for Shintoism, in a form suggesting worship of nature. During the long course of Japanese history, Buddhism and other philosophies gave other purposes and meanings to newly created gardens. From the Shintoist perspective, gardens were made for the gods. After Buddhism appeared in Japan, the meaning of gardens changed. Gardens were no longer dedicated to gods, nor were they ceremonial grounds. They represented images of paradise to the Buddhists. When the philosophies of the Zen sect were introduced in Japan, dry landscape gardens and tea house gardens were created. These gardens were created to save people's minds from the pressures of the chaotic world they lived in.

The remainder of this chapter describes how various types of Japanese gardens came into existence.

Shinto Gardens

The Japanese indigenous religion is Shintoism. Shinto means "the way of the gods". The ancient Japanese endowed natural elements with holy spirit. Purification of the

innocent mind was also emphasized. The Chronicles of Japan (completed in 720 A.D.) records that the earliest form of garden consisted of ponds dedicated to the gods, and rock-piles to be regarded as divine manifestations. Unfortunately, this type of garden did not survive to this day.

Religious ceremonies were held in gardens of noblemen and the residences of Shinto priests. The Shinto buildings were always oriented south in order to face the sun goddess. The ceremony was held at the south-facing front garden. Shinto gardens contained a flat earth-surface covered with fine white gravel to symbolize the purity and innocence of the mind. These flat Shinto gardens, as well as the courtyard gardens created on the north side of the building (figure 2), are not commonly treated as a classic type of Japanese garden because they lack a distinct style.

Pond Gardens

Buddhism was first introduced in Japan during the sixth century. It was accepted by the Imperial Court as well as by the common people. The Buddhist religion advocates that all will be led to Paradise after life who live with good will and pray to Buddha.

Although both the religion and the culture of Buddhism flourished for many centuries, it was not until the eleventh century when Pond gardens were created (figure 3). The dogma of Buddha inspired people to imagine the Buddhist paradise, and the wealthy had their gardens built to represent

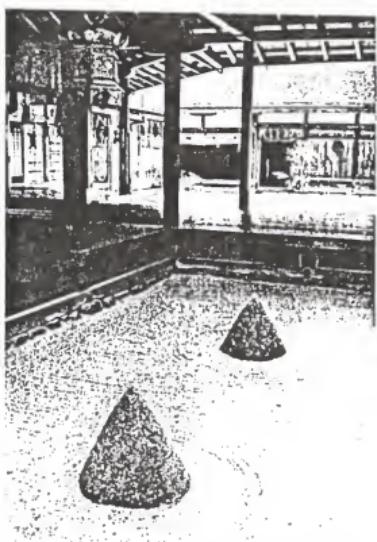


Figure 2. Shinto courtyard garden.



Figure 3. The Phoenix Pavilion, an example of a pond garden.

these images. Although they originated as a form of religious symbolism, the gardens became objects of aristocratic display of wealth. However, they displayed their wealth primarily in their dwellings. Gardens were built only to enhance the beauty of the architecture.

An estate was approximately 10 to 20 acres in size and contained a large body of water close to the building. The aristocrats' lavish dwellings were reflected on the water. Lotus flowers in the water symbolized an ever-lasting prosperity. Such an arrangement often employed the shakkei, a technique of a borrowing local scenery. When surrounding landscape is incorporated into the composition of garden, the scenery becomes a backdrop for the garden. Since Japan is a mountainous country, heavily vegetated mountains became the background in most cases. The garden itself only needed to provide a middle and foreground. Strolling paths were not defined since the gardens were primarily for viewing.

By the tenth century, the aristocrats began to lose control of their land and peasants who farmed their land. The peasants began to revolt against the landowners who collected most of their harvest. On the other hand, the warriors, who were hired by the aristocrats to guard them and help control the peasants, had increased their power. By the twelfth century, Hei-ke, a warrior clan, had gained central political power over the Imperial Court. For the following seven centuries, as the warrior class achieved a powerful

position in Japanese society, they also had their people build large gardens.

Stroll Gardens

During the fifteenth century when the tea ceremony was introduced along with the Zen sect of Buddhism, pond gardens began to be transformed into stroll gardens (figure 4). Stroll gardens also consisted of borrowed sceneries and a large body of water, somewhat similar to pond gardens. Although the gardens involved some religious symbolism, they were primarily for enjoyment of the tea ceremony. One or more tea houses were built in a garden along narrow paths which extended around the central pond.

In the layout of stroll gardens (figure 5), a large space created by a central pond forms the major feature. Paths connect a number of small intimate spaces. The difference between a pond garden and a stroll garden is this sequential experience along the paths which alternate an intimate, human-scale space and a space which opens the vista of the central pond.

Gardens often depicted famous sceneries in the country, or delineated places that are famed in highly praised literature. .

Unlike pond gardens, architectural elements existed in harmony with their naturalistic surroundings. Vegetation softens the hardness of tea houses and bamboo fences, and the crisp straight lines of architectural elements highlighted



Figure 4. A view in a stroll garden.

Figure 5. Plan of a stroll garden.



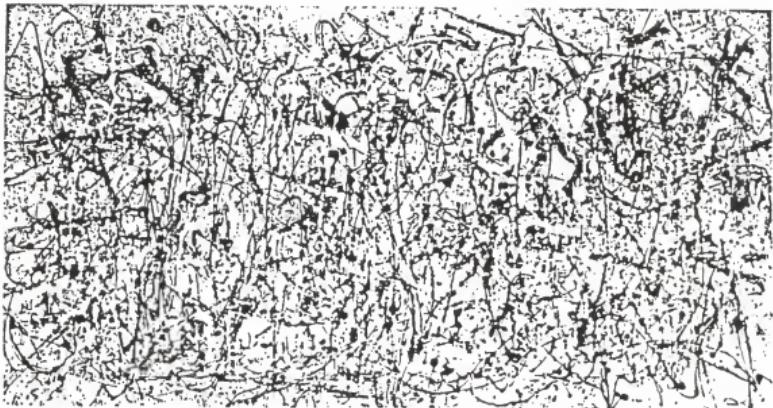


Figure 6. Jack Pollock. *Autumn Rhythm*. 1950.

the crystallographic pattern = created by vegetation which is dominant in the garden.

Many historical pond gardens and stroll gardens have been well preserved. Many American botanical gardens also display stroll gardens as one of the world's historic garden types.

². A crystallographic pattern refers to a composition which an equal emphasis is placed over the whole frame. This is well exhibited by Jack Pollock's Autumn Rhythm (figure 6).

Dry Landscape Gardens

The Japanese word for a garden, "niwa", implies a small area of ground. Japan is a very mountainous country. Half of its land is covered with woody vegetation. Only sixteen percent of total land is cultivated because of steep terrain. This physical condition leaves a very small area of land available for habitation. As a result, Japanese houses are very compact, with only a very small area of ground left for gardens.

As a consequence to these parameters, both dry landscape gardens and tea house gardens are typically quite small. Dry landscape gardens were built within Zen Buddhist temples in the mountains or as part of an urban area designated for religious activity, called "teramachi", a temple-district. In the mountains, the area allowed for temple construction was limited because of the steep slope, and in the designated urban areas, there was not enough space in a small lot to make a large garden.

Dry landscape gardens and tea house gardens are said to have evolved from Shinto courtyard gardens. In contrast to the flat front gardens which were more open to serve as public ceremonial grounds, courtyard gardens were enclosed, more intimate and personalized spaces (figure 2). A Shinto courtyard garden was a private garden, and its informality of being a private space permitted design flexibility (Itoh, 1973). The size of available space for dry landscape gardens

and tea house gardens fitted the nature of the space created in Shinto courtyard gardens.

Human-scale, rectangular garden space is defined by architecture and either hedges or mud walls (figure 7). A meditation room or a tea house encloses two or three sides of the space. Hedges or mud walls separate the intimate space from the public street or adjacent property.

Among many sects of Buddhism, Zen philosophies greatly influenced the development of garden art. Zen was introduced during the twelfth century and it reached its zenith by the fourteenth century. "Zen" literally means meditation in Sanskrit ³. Zen is a process of sweeping out the high degree of conscious mind and attaining a level of self-understanding and self-reliance. Zen Buddhists do not worship gods, nor do they attempt to seek Buddha's help. Salvation of one's mind is achieved only through one's strict sense of discipline and meditation.

Dry landscape gardens were created by Zen priests to express the essence of cosmos in their temple courtyards. Gardens were places for meditation, where one could discover oneself as a part of the whole of nature. In order to clearly perceive the universe, elements in the garden such as representations of mountains and the ocean were presented in an abstract way, yet employing natural materials in their

³. The language used in a region in India, where Zen sect of Buddhism was born.

true forms, colors and textures. The ocean and stream are represented by raked fine white gravel or sand. A waterfall is often suggested by stones that had been washed by running water and age. Water is non-existent, hence the name, "karesansui", dry landscape garden.

Tea House Gardens

Deeply related to Zen, the tea-ceremony was introduced from China in the fifteenth century, and developed in Japan since then. The tea ceremony gave Zen disciples opportunities to calm their minds, to meditate, and to develop an appreciation for the fine arts. Soon the tea ceremony gained popularity among people of all social classes. Tea house gardens are the only type of garden which penetrated to the general populace. Pond gardens, Shinto courtyard gardens, or dry landscape gardens did not greatly influence gardens of common people.

The tea ceremony gradually decreased its religious aspect, and became a social practice based on acquiring proper etiquette and aesthetic perception of wabi and sabi (see chapter 4, page 30 and 34).

The original type of tea house garden is called tsuboniwa (figure 8). It provides spaces extended from the tea room, mimicking a deep forest. A veranda runs along the side of architecture enclosing the garden. When removable sliding doors along the veranda are removed, the garden and the tea room become one space. Tsuboniwa provided the serene and tranquil sensation of deep mountain forest.

A tsuboniwa was transformed into another type of tea house garden due to a further limitation of available space. More and more tea houses were built in urban spaces as the tea ceremony gained popularity among common people. Urban

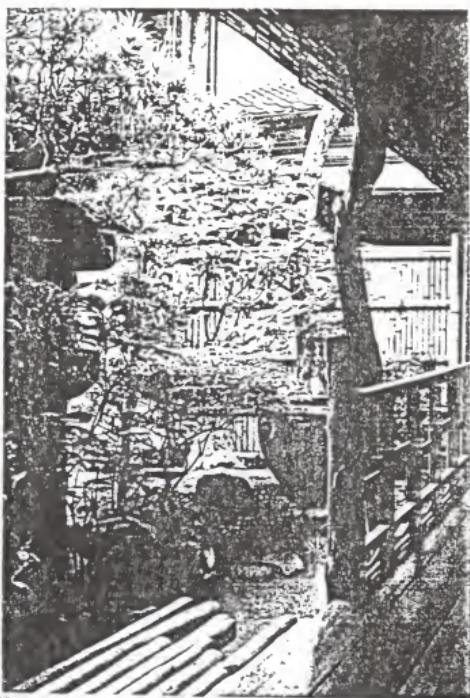


Figure 8. A tsuboniwa,
a pot garden.



Figure 9. A roji, an alley
garden.

lots were small and narrow so that the site design and the architectural plans had to be adjusted. They omitted the veranda and removable sliding doors, and replaced them with an exterior wall and a small sliding door. The tea house and the garden now became separated.

A narrow lot did not afford enough space to be viewed from the tea house. A narrow space approaching a tea room from an entrance gate became a garden. This type of garden is referred to as *roji*, an alley garden (figure 9). A roji provided the visitors with the opportunity to calm their minds for the tea-ceremony as they approached the tea room. The space broke the connection between the chaotic secular world and a space reserved for quiet meditation.

A roji is also presented in a very natural way. It contains a sensation of a mountain forest, although one step outside the entrance gate may be the middle of a city. Filtered sun light and the whispering of leaves gives the visitor an illusion of a serene mountain path.

Japanese Gardens in Modern Age

As the science advanced, reasons for every phenomena in this world have been explained. People and their culture became less superstitious, and less influenced by religions. The world has become much more secular in modern age. Although Japanese gardens were first intended for religious purposes, the original religious faith among people is gradually vanishing over time. Symbolism may still give us mystery, but people can no longer make associations because of the lack of religious background. Symbolism became "superficial manifestations of ...subtle aesthetic code" (Wigginton, 1963).

From the time of Shinto pond and rock gardens until the time when tea house gardens became well adapted in urban residential landscaping in Japan, the meaning of the gardens have changed and new styles evolved. Even so, a set of spatial qualities that ancient Shinto and Buddhism priests and tea masters had accumulatively established still remains to be unique characteristics of Japanese gardens. These qualities are still expressed in urban residential landscape design in Japan.

Tranquil, rustic, refreshing and mysterious qualities of Japanese gardens are also favored by the Americans. As a result of frequent cultural exchanges supported by the advancement of international transportation and communication systems, the Americans reproduced Japanese gardens on their

land. They also adapted the Japanese spatial qualities to their outdoor space designs.

In adaptation of Japanese spatial qualities, however, designers have to accommodate the impractical nature of Japanese garden design into practical requirements in contemporary spaces. This is because contemporary spaces are oriented toward activity while Japanese gardens are not. Design aspects that express the unique spatial qualities are not necessarily practical for activity in Japanese gardens. For example, stepping stones express the naturalness with their texture in a raw state, but they are not always flat and not necessary easy to walk on. They are irregularly spaced to make it difficult to walk fast so that a visitor will naturally pause and look toward a particular object or view (figure 10). These conflicting conditions lead to my hypothesis; in order to express Japanese spatial qualities, design of the space needs to accommodate both the practicality for expected activity and visual aspects that are critical to express spatial qualities. In order to examine if contemporary designs present Japanese spatial qualities differently, and if they do, to examine how they are presented, I analyzed both types of spaces in the following chapters.



Figure 10. Stepping stones;
they direct us toward an object
or a view.

CHAPTER 3

Research Procedures

In order to examine how spatial qualities are presented in a design, it is necessary to analyze how the objects within the space are used. This is because man senses spatial qualities by perceiving presence (or absence) of objects, physical qualities of objects in the space, and the spaces within a space created by the arrangement of the objects.

This research is based on one individual's visual analysis. It is a limitation of this study that all analysis made is based upon author's visual perception. The analysis procedures are as follow.

1. Identify spatial qualities that are unique to Japanese gardens and design aspects which present each quality. This was done by synthesizing the followings; listings of characteristics of Japanese gardens written by four landscape architects (Chapter 4, page 26), the author's observations made on Japanese gardens (procedure 1), and a review of related literature.
2. Summarize the discussion of procedure 1; how each property (color, form, texture) of objects (vegetation, architectural objects, stones and earth, water) is presented, and how they express spatial qualities in Japanese gardens.

3. Summarize the results into a list of questions to be asked in analysis of contemporary outdoor space designs. The questions examine whether or not each property of objects expresses a certain design aspect which is perceived as one of four Japanese spatial qualities identified in the first procedure. Chapter 4 consists of procedure 1 through 3.
4. Analyze contemporary outdoor spaces which contain Japanese spatial qualities. The analysis is based on the answers to the list of questions, site conditions and observations.
5. Summarize the result of procedure 4. Discussion will include whether or not Japanese spatial qualities are presented differently in contemporary landscape designs, and if they are, how and why they are designed differently. Chapter 5 consists of procedure 4 and 5.

CHAPTER 4

Spatial Qualities of Japanese Gardens

The following are lists of characteristics of Japanese gardens which some landscape architects have summarized, based upon their experiences in Japanese gardens, together with background knowledge of Japanese culture. By studying their observations and reflecting on the experiences of the author, I have listed four unique spatial qualities sensed in Japanese gardens. They are; *wabi*(W), *sabi*(S), and relief and refreshment(R) and mystery(M). (Note: Letters within the parentheses are codes used for the classification described below).

As discussed in the previous chapter, spatial qualities are sensed by perceiving the physical qualities of objects in a given space. Physical qualities of objects are designed so that we experience them and perceive some kind of sensation as a result. In order to examine which objects express each spatial quality, I have classified each listing below into its resulting spatial quality. An alphabetical designation for each spatial quality is marked within parentheses immediately following each listing.

Four Lists of Japanese Garden Characteristics

List 1: Elwood, 1929

1. Unity and interdependence of garden and house (R-2)
2. Perfect balance of planting and open spaces (W-1)
3. Picturesque appearance of trained plant materials (S-1 and R-3)
4. Planned planting for seasonal effect (S-2)
5. Not dependent on floral effects (W-2)

6. Love of plants (R-3)
7. Skillful use of accessories, water and rocks (M-1)
8. Aged appearance of materials (S-1)
9. Overall picturesque beauty (S-1)
10. Skillful treatment of plants for aged appearance (S-1)
11. Tea house as center of enjoyment (not applicable)

List 2: Koh, 1986

1. Total harmony of garden and architecture, art and nature (R-2)
2. Sequential experience and partial revelation (M-2)
3. Open-ended and suggestive symbolism (M-1)
4. Emphasis on void, silence and negativism (W-2)
5. Reverence for nature and love of naturalness (R-1,2,3)
6. Balance of order and disorder (R-3)
7. Garden and house enclosed with walls (W-1)
8. Compression and miniaturization (R-1)
9. Purity and austerity / simplicity and restraint (W-1,2,3,4)
10. Integration of high culture and popular culture (not applicable *)

List 3: Nakamura, 1986

1. Artistic manipulation of nature by use of miniaturization (R-1)

List 4: Wigginton, 1963

1. Appreciation of richness of very simple materials (R-3)
2. Essence of nature expressed with artistic style (R-1)
3. Subdued focal point (R-2)
4. No symmetry (R-3)
5. No Consistency (R-3)
6. Reduction of scale (R-1)
7. Aged appearance of plants (S-1)

The following discussion on each of the four Japanese spatial qualities and their design aspects is based on the listings above, the author's on-site observations, and a review of relevant literature. The gardens listed below are the ones actually visited.

*. This quality is not classifiable because it does not contribute in creating a spatial quality examined in this study.

Rikugi-en; Roku-Chome, Honkomagome, Bunkyo-ku, Tokyo,
Japan.

Kyu-Furukawa Tei-en; Ittchome, Nishigahara, Kita-ku,
Tokyo, Japan.

The Huntington Botanical Gardens; 1151 Oxford Road,
San Marino, California

Wabi

Wabi refers to the subtle, clean and simple quality of objects. It also refers to tranquil, serene and reserved impression which one experiences when perceiving such objects. Wabi and sabi (described in page 34) characterize the Japanese aesthetic concept established by one of the greatest tea masters, Sen-no-Rikyu. One of the objectives of the tea ceremony is to nourish richness of mind which enables one to appreciate subtle beauty in very simple things.

Wabi is experienced by perceiving the following design aspects.

1. Human-scale enclosure
2. Subtlety
3. Filtered light
4. Simplicity

1. Human-Scale Enclosure

Human-scale enclosures are created by the forms such as walls, hedges, bamboo fences, and plant masses (figure 11). Japanese gardens provide an environment which is a direct contrast to the busy pace of life experienced in the everyday world. Physical separation from the fast-paced world gives us the opportunity to contemplate and free our mind. Such enclosed spaces secure and calm our minds. Thus enclosed

Figure 11.
A human-scale enclosure.



Figure 12. Filtered light in a
partially revealed space.

spaces contribute to a state of calm and quiet spatial quality.

2. Subtlety

Subtlety is expressed by use of colors depicted from a natural landscape. The dominant hue used in Japanese gardens are green and brown. They are used with a variety of values and low intensities. Use of reds and blues is suppressed; beauty of vivid color is enhanced in subtle ways when a small amount is placed in a green monochromatic color scheme. The Japanese associate subtle coloration with conservatism, and we sense the suppressed and restrained atmosphere in spaces of such coloration.

3. Filtered Light

As a result of enclosure created by over-story vegetation, the light is filtered into the enclosed space (figure 12). Soft shadow patterns increase the feeling of being protected. As such, they calm our minds by giving the impression of being in a secret refuge.

4. Simplicity

Simple forms of man-made objects are visually serene. Straight lines outlining a building, mud walls, or repeated crossing of diagonal lines of a bamboo fence give accents of clarity among other natural forms which are dominant in a space (figure 13). Their simple and precise forms also give an impression of tightness and restraint (Koh, 1985). Flat horizontal planes of water or white gravel are also soothing



Figure 13. Simplicity of a man-made form.

to the eyes. We visually associate water with cool and refreshing sensation, thus evoking a serene sensation.

Sound of Water

Although this is not visually perceived, the sound of flowing water enhances the quietness by it being the only sound we can hear in that space. It can be the sound of a waterfall, or it can be the sound of dripping water from bamboo pipe over dipping basin.

Sabi

Sabi refers to an unadorned, plain and antique quality of objects. It also refers to lonely and rustic impression which one experiences when such objects are perceived. Sabi is sensed by perceiving the following design aspects: aged and picturesque appearance of plants and stones, and seasonal display of bright colors.

1. Aged Appearance

Plants are often pruned and trained to purposely create aged appearance. Asymmetry is the key to create such appearance of plants that have been struggling against strong winds. Rough texture of tree trunks also suggests the hardy character of trees which have survived through the years. Water-washed smooth rocks also suggests the long age they have been through. Chipped stone lanterns, moss-covered paths, tree trunks, and garden rocks also increases the quality of sabi (figure 14). In addition, the subdued, faded colors of these objects are also associated with age.



Figure 14. Rustic rocks covered with ferns and moss.

2. Seasonal Display of Bright Colors.

Vivid colors of autumn foliage and flowers are only seasonal. After a brief display of bright colors, a green monochromatic color scheme appears even plainer with patches of color fallen on the ground. Such a scene evokes loneliness of seeing the disappearance of nature's magic that is only seen once a year.

Relief and Refreshment

Relieving and refreshing sensation is evoked by perceiving a naturalness in the space. People who live in cities do not experience a gentle embracing of nature everyday. All people seem to have a yearning for being close to nature. When they experience naturalness in Japanese gardens, spaces filled with naturalness, it can relieve their mind from the busy complicated world, and refresh their souls.

The art of Japanese gardens comes from a sense of artlessness. This statement sounds contradictory. It means that the space is unmistakably manipulated by man, yet it appears as if it is not. The garden is arranged in such a manner that there is no apparent human manipulation of the space. This quality is expressed by the following aspects.

1. Harmony of man and nature
2. Harmony of man-made forms and natural forms
3. Naturalness

1. Harmony of Man and Nature

A harmonious relation between man and nature is achieved by reducing the scale and expressing the essence of nature. In a space which scale is relative to human, nature is pulled closer to man (Lee, 1982). A reduced scale lets the compact natural scene fit the human-scale enclosure, lets a person perceive the scene at a glance and look at the sensitive details such as moss on the rocks, texture of the rocks. In a natural space which is reduced to human scale, we can touch the objects within the space, see them closely, and listen to delicate sound of leaves play with a breeze. The intimacy to nature relieves and refreshes our mind because we feel ourselves as a part of nature (figure 11).

2. Harmony of Man-made and Natural Forms

In Japanese gardens, there is no strong form to stand out in a space. Garden scenes depict landscape of distant mountains, where very little habitation takes place and man-made structure is not dominant. Simple geometry of architectural forms are subdued by the vegetation and only partially visible; they give accents of straight lines among the crystallographic pattern of vegetation masses (figure 15). Man-made forms become part of the scene, rather than the major feature. In such spaces, we feel a sense of belonging to the space, and we exist in harmony with the surroundings.

There is neither a repetition of geometric forms which



Figure 15. Architectural forms subdued by the vegetation.



Figure 16. Complementary relationship between man-made and natural forms.

would give a strong sense of order. Every element exists in harmony with all others without specific emphasis. In contrast to western design which makes man-made structures stand out as dominant features, a Japanese garden and a building complement each other and exist in harmony (figure 16).

3. Naturalness

As opposed to western gardens, symmetry and geometric patterns are rarely seen in Japanese gardens. Symmetry and regularity are very strong organizing principles; they enhance the importance of the object or the space created by such objects. Designs with no symmetry give an impression that there is no imposing design for the garden, which is exactly how Japanese gardens are planned, to make the naturalness happen (Ching, 1979, and Holborn, 1978). Naturalness is expressed by depicting scenes from natural landscape (figure 17).

Construction materials that are used in Japanese gardens exhibit naturalness. Materials are used in a raw state, or treated only to enhance the natural beauty of their form, color and texture.

For example, trees are often trained to create inclining forms; they delineate naturalness by depicting diagonal lines and an informal balance, which is often observed in nature (figure 18). Wooden elements are left unfinished and painted in order to expose the natural grain



Figure 17.
A scene depicted in
nature.



Figure 18. Inclining trees.



Figure 20. Naturalness
of materials; stones.



Figure 19. Naturalness of materials; wood.

and color (figure 19). Stones that are used for defining paths are rarely cut (figure 20). Natural forms of rocks dictate the design rather than the design dictating the forms of rocks.

Mystery

Mystery is sensed by perceiving the following design aspects listed below. Discussions of each aspect will follow.

1. Symbolism
2. Sequential and partial revelation of spaces
3. Shady enclosure

1. Symbolism

Rocks often represent a mountain, which is said to symbolize knowledge. Water is said to symbolize emotion (Itoh, 1972) Background knowledge of oriental philosophies have to be taught before one can make such association. However, communication around the world has advanced so much that almost anybody has at least once been informed that some objects in Japanese gardens have symbolic meanings. Although we may know that there are hidden meanings to objects like a group of rocks in a pond or a dipping basin, we may not know what they mean. This unfamiliarity to the meaning of objects evokes a mysterious impression (figure 20).

2. Sequential and Partial Revelation of Spaces

This quality is experienced on narrow paths along which plant masses define a series of spaces. Spaces unfold one after another as one proceeds through, perceiving spaces and objects of only a short distance ahead of him. A winding



Figure 21. Mysterious shadows on an unfamiliar object.

path reveals proceeding spaces only partially, thus heightening a sense of anticipation toward the next space. Such experience may be mysterious, for we can not clearly perceive a whole space at a glance (figure 12).

3. Shady Enclosure

Walls, fences, hedges, and/or informal plant masses enclosing a small space sometimes cast dense shadows. Because of the darkness, we can not clearly visualize the space. A feeling of uncertainty in the darkness adds mysterious impressions to the space. Negativeness which we commonly associate with shadows may also contribute to give the impression of mystery (figure 21).

Analysis of Objects in Japanese Gardens

In order to establish the basis upon which design of contemporary outdoor spaces can be compared, I have identified how each property (form, color and texture) of objects (categorized in vegetation, man-made objects, stones / earth, and water) in Japanese gardens is used. Furthermore, I identified the design aspects and spatial qualities that are expressed by each property (this is shown on the following pages). The results are tabulated (see summary of observations on page 50), and converted into a list of questions (page 51). These questions are then employed to analyze contemporary outdoor design.

Vegetation Analysis

object	property	description
over-story vegetation	color	Green-monochrome (W-2) Seasonal bright colors (S-2)
	form	Enclosing (W-1, R-1, R-2, M-2, M-3) Natural form (R-3)
	texture	Natural & contrasting (R-3) Filtering light (W-3, M-3)
under-story vegetation	color	Green-monochrome (W-2)
	form	Informal mass (R-3) Trained and trimmed (S-1)
	texture	Natural & contrasting (R-3)
ground cover	color	Contrast with paths (R-3)
	form	Natural & irregular (R-3)
	texture	Natural & contrasting (R-3) Aged appearance of moss (S-1)
flowers	color	Short display of reds/blues (S-2)
	form	(no significant contribution)
	texture	Not showy (R-3)
hedge	color	Green-monochrome (R-3)
	form	Rectilinear / clipped (W-4)
	texture	Natural (R-3)

Man-made Object Analysis

object	property	description
tea house	color	White / brown (W-2, M-2)
	form	Rectilinear / simple (W-4) Human-scale (R-2)
	texture	Natural (R-2, R-3)
walls	color	Earth-tone (W-2) Unpainted wood (R-3)
	form	Rectilinear / simple (R-4)
	texture	Natural (R-3)
fences	color	Brown / yellow ochre (W-2, R-3)
	form	Enclosing / dividing (W-1)
	texture	Natural (R-3)
Accesso- ries	color	Earth-tone / gray (W-2, R-3)
	form	Depiction of Japanese culture (M-1) Visual weight (W-2)
	texture	Natural (R-3)

Stone/Earth Analysis

object	property	description
stepping-stones	color	Natural earth-tone (W-2, R-3)
	form	Natural (R-3)
	texture	Natural (R-3)
garden-stones	color	Natural earth-tone (R-3, S-1)
	form	Natural (S-1, R-3) Grouping (M-1)
	texture	Natural (S-1, R-3)
gravel	color	White (W-2, W-4)
	form	Used on flat surfaces (W-4)
	texture	Fine / mimics water (W-4)

Water Analysis

object	property	description
pond	color	Moss-green (R-1, S-1)
	form	Organic / informal / asymmetric / natural (R-3, M-2)
	texture	Smooth / still (W-2)
stream	color	Low value color (W-2, R-3)
	form	Meandering / tweaking (R-3, R-1)
	texture	Fine (R-3)
waterfall	color	White splashes (R-3)
	form	Straight vertical (W-4)
	texture	Fine (R-3)
Dipping-water (water-basin)	color	Low value color (W-2, R-3)
	form	Small scale (R-1) Historical / cultural meanings (M-1, S-1)
	texture	Smooth / still (W-2)

Summary of Observations

code	design aspect	property of object used
W-1	enclosure	form
W-2	subtlety	color
W-3	filtered light	form
W-4	simplicity	form, color
S-1	oldness	form, color, texture
S-2	ending of seasonal effect	color
R-1	man / nature harmony	form
R-2	man-made / nature harmony	form
R-3	naturalness	form, color, texture
M-1	symbolism	form
M-2	sequence of space and partial revelation of space	form
M-3	shady space	form

Form; creates sequences of partially revealed spaces.
encloses and symbolizes.
expresses oldness, naturalness, simplicity.

Scale; harmonizes man and nature, man-made forms and nature.

Color; expresses subtlety, simplicity and naturalness.

Texture; filters light, expresses naturalness.

Sample Form of Questions

Project Name:
Designer:
Date of Completion:

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?		
Do forms enclose spaces?		
Do forms express oldness?		
Do forms express naturalness?		
Do forms express simplicity?		
Is there any symbolizing form?		
Do forms filter light?		
Does the scale of man and natural forms balance?		
Does the scale of man-made forms and natural forms balance?		
Do colors express subtlety and simplicity?		
Do colors express naturalness?		
Do textures express naturalness?		
Do textures express oldness?		

CHAPTER 5

Contemporary Landscape Design Analysis

Contemporary outdoor spaces in which I felt spatial qualities of Japanese gardens are analyzed to examine which objects and how they are used in presenting spatial qualities. Sites to be examined were chosen on the basis of the author's accessibility to the site, and availability of photographs (slides) which compensated for the author's inaccessibility to the site.

Visited analysis sites;

1. Professor Robert Guenter Residence, Lincoln, Nebraska. (a residential landscape)
2. Venice Hongwan-ji Buddhist Temple
12371 Braddock, Culver City, Los Angeles, California. (a small urban institutional landscape)
3. Yamashiro Restaurant and Hotel
1999 North Sycamore Avenue, Hollywood, California. (Commercial)
4. Yo-ga Promenade, Yo-ga, Setagaya-ku, Tokyo, Japan. (an urban street-scape)

Sites which analysis was done by viewing slides;

5. Waterfall Garden, Seattle, Washington.
(an urban plaza)
6. Skyline Park, Central Bank, Denver, Colorado.
(an urban architecture landscape)

I answered the list of questions on the previous page on each design, described conditions of the site, and recorded observations on what made the design different from Japanese garden design; these observations led to an analysis.

Project Name: Professor Guenter's residence
Designer: Professor Robert Guenter
Date of Completion: 1974

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	N	Spaces are defined by straight lines and planes.
Do forms enclose spaces?	Y	Fence, hedge, canopy in backyard.
Do forms express oldness?	Y	Rustic form of junipers.
Do forms express naturalness?	Y	Vegetation and water.
Do forms express simplicity?	Y	Straight lines of wood fences.
Is there any symbolizing form?	N	No authentic accessories.
Do forms filter light?	-	Only partially done due to allowable space.
Does the scale of man and natural forms balance?	Y	
Does the scale of man-made forms and natural forms balance?	Y N	(Back-yard garden) Side-yard has few plants which soften the straight corridor.
Do colors express subtlety and simplicity?	Y	Green, white, brown and yellow based.
Do colors express naturalness?	Y	Vegetation, raw wood, moss-green water.
Do textures express naturalness?	Y	Unpainted furniture, deck, and no turf.
Do textures express oldness?	Y	Pond edging stones and moss in the pond.

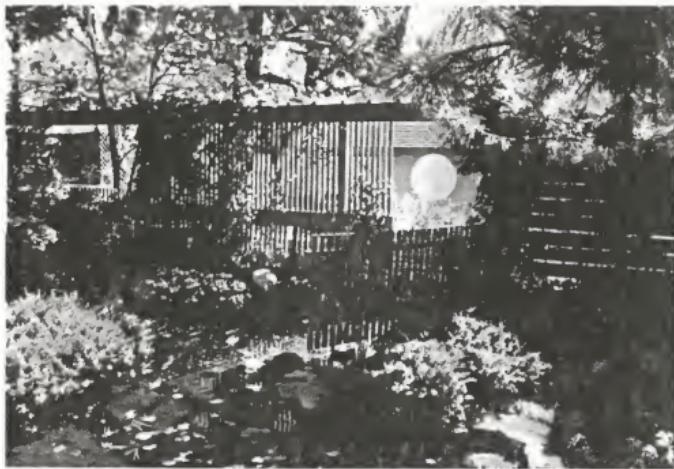


Figure 22. Professor Guenter's residence.

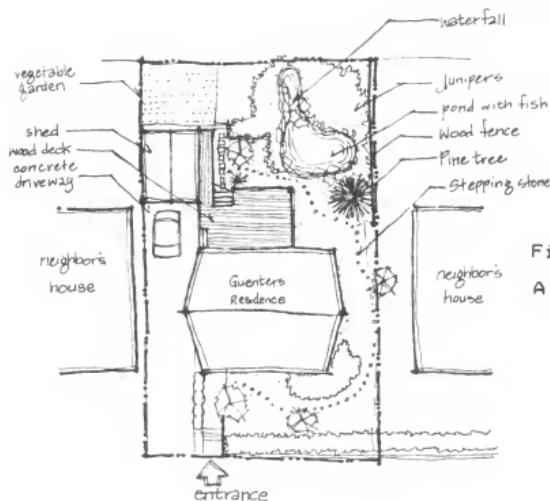


Figure 23.
A simplified plan

Professor Guenter's Residence

Location

Lincoln, Nebraska

Designer

Professor Robert Guenter

Date of Completion

1974

Conditions

1. Urban residential lot. A narrow strip of side yard for access to the back yard, and a concrete paved driveway on the other side of the house (figure 23).
2. Designed and implemented by Professor Guenter himself, who is interested in Japanese architecture and gardens. He loves quiet and rustic quality of Japanese gardens, and has traveled to Japan and visited a number of Japanese gardens.
3. A residence of an older couple. No need for children's play area. A viewing deck with chairs and table extends the interior living area.
4. Exterior appearance of the house is plain; white and dark brown plain surfaces compose plain cubic form. The house is two story structure.

Observations

Unavailability of plant materials.

The backyard garden lacks variety in plant texture and color values. This is due to unavailability of plants which will survive through severe winters. Plants used in Japanese gardens are native to Japan. The basic palette consists of broad-leaf and needle leaf evergreen which exhibit variety of texture and variety of shades of green. The use of junipers successfully express the antique quality with their subdued and rustic coloration.



Figure 24. Side-yard of
Guenther's residence.



Figure 25. Unavailability of natural rocks.

Absence of sequential space experience.

The space between Professor Guenter's residence and his neighbor's house is not separated by fences because of their preference. This strip of space is defined mostly by the buildings, and the straightness of the space is not soften by vegetation (figure 24).

Unavailability of construction materials.

Circular concrete plates are used as stepping stones (figure 25). Although the same shape of stones are seen in some of the Japanese gardens, concrete gives a cold impression. Professor Guenter has mentioned the unavailability of washed river stones around the region. Compensation has been made by acquiring limestone pieces from a rural farm ground, and will be used as garden elements in the future.

Un-necessity of Japanese symbolism.

There are no historical accessories such as a stone lantern and a dipping basin. If there was, it would be meaningless because there would be no association made between the accessory and the site, which exists in totally different cultural setting.

Lack of over-story vegetation.

Even though the backyard is enclosed by plain unvarnished wooden fences and vines, the enclosure lacks in overhead coverage. This is partially because of the concrete paving of the drive-way (figure 26), and partially because of the

preference of spaces that are open for more sunlight.



Figure 26. Lack of over-story vegetation.

Project Name: Venice Hongwan-ji Buddhist Temple
 Designer: Collaboration of church members
 Date of Completion: c. 1980

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	Y	Not accessible but visually suggested
Do forms enclose spaces?	Y	Not human scale but display a small enclosure.
Do forms express oldness?	Y	Pruned pine trees and natural stones.
Do forms express naturalness?	Y	Plant masses and rocks.
Do forms express simplicity?	Y	Straight lines of fence and building.
Is there any symbolizing form?	Y	Stone lantern.
Do forms filter light?	N Y	Very few over-story trees. Wooden fence with vines.
Does the scale of man and natural forms balance?	Y	
Does the scale of man-made forms and natural forms balance?	N	Building is more dominant without vegetation to soften the straight edges.
Do colors express subtlety and simplicity?	Y	Green/beige/brown.
Do colors express naturalness?	Y N	Vegetation and rocks. Painted building trims and concrete paving.
Do textures express naturalness?	Y N	Variety of plant texture. Cold brass texture of bar fence.
Do textures express oldness?	Y	Pine tree barks and stones.



Figure 27. Venice Hongwan-ji Buddhist Temple.



Figure 28. Hongwan-ji; the landscaping is appreciated from both public street and interior.

Venice Hongwan-ji Buddhist Temple

Location

Culver City (near Los Angeles), California.

Designer

Collaboration of the church members.

Date of Completion

c. 1980

Conditions

1. Urban religious institution. The landscaping was done by collaboration of church members.
2. Very little space for front and side landscaping, which is adjacent to sidewalks.
3. Building is two story, beige stucco with brown wood vertical strips (figure 27).

Observations

Visual experience of an intimate enclosure.

There is not enough space to create enclosure for man. Even though physical experience of intimate enclosure is not possible on this site, such an experience is visually possible by perceiving small spaces created by smaller plant masses, rocks, and low fences.

View from public side and from inside the building.

Although the landscaping takes a form of tsuboniwa (enclosed small tea house garden), the enclosure does not separate the public side and private side. The design is oriented to both sides. Brass-bar fences with stone anchor-columns serve as physical separators, but they allow viewing from the public side (figure 28).

Project Name: Yamashiro Restaurant and Hotel
Designer: Unknown.
Date of Completion: c. 1960

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	N	One square open space.
Do forms enclose spaces?	Y	Building encloses.
Do forms express oldness?	Y	Rocks and building.
Do forms express naturalness?	Y	Plants, rocks, water.
Do forms express simplicity?	Y	Horizontal and vertical lines of building walls.
Is there any symbolizing form?	Y	Lantern and water basin.
Do forms filter light?	N	No enclosing vegetation.
Does the scale of man and natural forms balance?	N	Scale of nature is too small.
Does the scale of man-made forms and natural forms balance?	N	No vegetation in comparative scale to building.
Do colors express subtlety and simplicity?	N	Lacks low-value greens.
Do colors express naturalness?	Y	Vegetation and rocks.
	N	Water is too clean.
Do textures express naturalness?	Y	Natural rocks.
	N	Few plant textural contrast, concrete edging of pond.
Do textures express oldness?	Y	Rocks.



Figure 29. The atrium dining room of Restaurant Yamashiro.

Yamashiro Restaurant and Hotel

Location

Hollywood, California.

Designer

Unknown.

Date of Completion

c. 1960

Conditions

1. The landscape is in the restaurant's courtyard, providing open space for viewing and for natural lighting (figure 29).
2. The space is occasionally used for wedding ceremonies.

Observations

Enclosure depended upon structure.

All four sides of the garden are enclosed by the building with a porch extended for dining tables. In order to have good views from all tables, plant masses which interfere with the views are avoided. On wedding occasions, spaces without large trees accommodate more people within the space. This resulted in the space being open without filtered shadow patterns: it gives a sunny Californian flavor.

Project Name: Yo-ga Promenade
Designer: Zou Sekkei Shu-dan
Date of Completion: 1985

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	N	Straight and linear space.
Do forms enclose spaces?	Y	(Plant mass are still immature.)
Do forms express oldness?	Y	Use of medieval roof decoration and twisted wood
Do forms express naturalness?	Y	Informal shrub masses. Rounded edges of play area.
Do forms express simplicity?	Y	Rectilinear and curve-linear forms of site furniture.
Is there any symbolizing form?	Y	Miniature shrine.
Do forms filter light?	Y	(Canopy trees are still immature.)
Does the scale of man and natural forms balance?	Y	
Does the scale of man-made forms and natural forms balance?	Y	
Do colors express subtlety and simplicity?	Y	Gray paver and pebble stone trim, and green vegetation.
Do colors express naturalness?	Y	Indigenous material are used.
Do textures express naturalness?	Y	Geometry of tile paver, and play area furniture.
Do textures express oldness?	N	Smoothness of tile paver appears modern.
	Y	Association with long-used indigenous clay tiles.



FIGURE 7. Children's play area at Yoda Promenade.

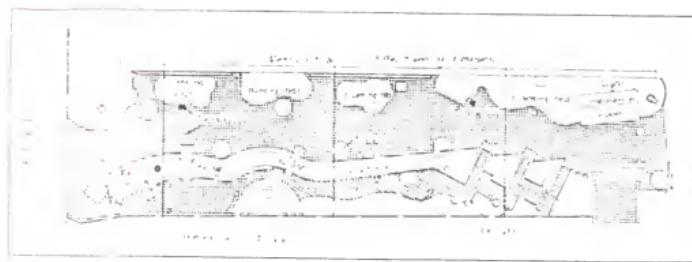


Figure 11.
A miniature stream at
Yoga Farm, India.

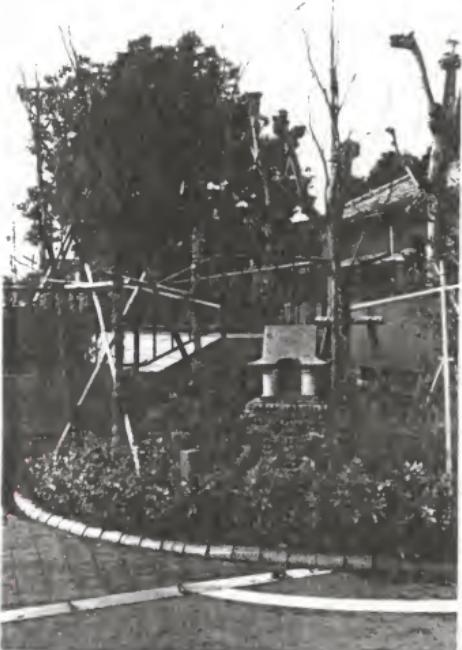


Figure 12. Details: edging of the stream.

Yo-qa Promenade

Location
Tokyo, Japan

Designer
Zou Sekkei Shu-dan

Date of Completion
1985

Conditions

1. An urban street-scape of narrow residential streets and an alley. One of the streets accommodates both limited vehicular access and children's play area (figure 30 and 31).
2. The project site extends from a train station to a major park / art museum complex.
3. The residential structures along the promenade face the public street without setback spaces.

Observations

A wide street, yet intimately enclosed.

The width of the space is wider in the section of the project where pedestrian traffic, limited vehicular traffic, and children's play activity are accommodated. Despite this wide width, planting beds are laid out so that their irregular curving lines extend out toward the center-line to bring the vegetation mass closer to the users.

Naturalness delineated with hard material.

The meandering course of water also delineates naturalness although hard material is used for construction. Pebble stones are laid in the stream bottom and the rounded edging of the watercourse (figure 32).

The new-and-old concept of space.

Clay roof-tiles are used for the paver. While the

smooth texture gives an impression of contemporary space, the oldness is associated with the indigenous building material that has been used for ages.

Reminders of Japanese culture.

Although the space appears as westernized contemporary space, there are details that exhibit Japanese cultural heritage, such as a miniature shrine (figure 33).

Project Name: Waterfall Garden
Designer: Masao Kinoshita
Date of Completion: c. 1980

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	N	One small space
Do forms enclose spaces?	Y	Building & vegetation.
Do forms express oldness?	N	Geometric furniture and planters.
Do forms express naturalness?	Y N	Rock and water Geometric furniture.
Do forms express simplicity?	Y	Geometric furniture.
Is there any symbolizing form?	N	
Do forms filter light?	N	Very little canopy trees.
Does the scale of man and natural forms balance?	Y	
Does the scale of man-made forms and natural forms balance?	N	Man-made forms are more strongly expressed.
Do colors express subtlety and simplicity?	Y	Strong accent of flower Mostly green, brown, reddish brown based.
Do colors express naturalness?	Y	Vegetation and rocks.
Do textures express naturalness?	N	Poor variety of plants.
Do textures express oldness?	Y	Informal rocks.

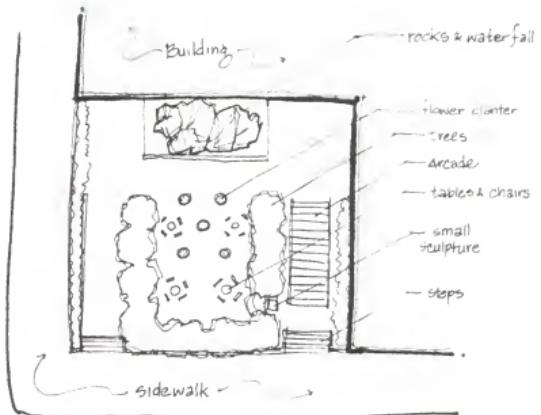


Figure 34. A simplified plan of Waterfall Garden.

Figure 35.
The waterfall at the
sitting area.



Waterfall Garden

Location

Seattle, Washington

Designer

Masao Kinoshita

Date of Completion

c. 1980

Conditions

A corner urban plaza surrounded by tall buildings on two sides. A very small space serves as an urban social space (figure 34).

Observations

Necessity of sitting spaces and hard ground-surface.

Waterfall garden is a small urban space where people come to get away from the fast pace of their lives, to relax, and to socialize with others. Sitting spaces have to be provided in order to successfully serve as a social space. (Whyte, 1980). Naturalness of earth is not appropriate in order to provide hard surfaces for site furniture. Naturally, the planting space will be limited, and therefore, the space lacks physical enclosure by vegetation masses.

A small space for expressing naturalness.

Despite of the lack, or insufficiency of enclosing vegetation, naturalness is expressed in Waterfall Garden. Although the rock mass of the waterfall is not very large, it appears relatively dominant in such a small space (figure 35). This dominant natural feature successfully expresses naturalness even though very few materials are used in their raw state.

Refreshing water.

The mass of rocks gives a visual weight, and appears very stately and calming. The water that runs on the rock surface gives a refreshing impression by contrasting its white splash against the stones.

Project Name: Skyline Park
Designer: Lawrence Halprin
Date of Completion: 1970

<u>QUESTIONS</u>	<u>Y/N</u>	<u>NOTE</u>
Do forms create a sequence of partially revealed spaces?	N	Straight linear space.
Do forms enclose spaces?	Y	Over-story plants and berm.
Do forms express oldness?	N	Geometric, clear form.
Do forms express naturalness?	Y N	Vegetation. Building and rocks.
Do forms express simplicity?	Y	Clean-cut form of rocks and building.
Is there any symbolizing form?	Y	Colorado mountains?
Do forms filter light?	Y	Enclosing vegetation.
Does the scale of man and natural forms balance?	Y	
Does the scale of man-made forms and natural forms balance?	N	Building is dominant.
Do colors express subtlety and simplicity?	Y	Dark blue of building, green plants, earth tone stones.
Do colors express naturalness?	N	Greens of poor value variety.
Do textures express naturalness?	N	Smooth texture of glass and rock is dominant.
Do textures express oldness?	N	Natural textures of rocks are lost.



Figure 36. Skyline Park.

Skyline Park

Location

Central Bank, Denver, Colorado.

Designer

Lawrence Halprin

Date of Completion

1970

Conditions

An urban commercial landscaping which accommodates pedestrian traffic through the space (figure 36).

Observations

Relating architecture to the pedestrian space.

The design of Skyline Park evokes refreshing sensation by the use of clean-cut stones which repeats the hardness of a building behind them. Flowing water over the stone surface softens the hardness of the rocks. Clean-cut surfaces of a glass-covered building are repeated in cut-surfaces of the sculptural group of rocks. Although the forms are created by straight planes, they give an impression of the natural rock formation.

Although the natural texture of stone is smoothed out, the irregular geometric forms of cut rocks express the form of natural rock formation in an abstract way. The corridor is defined by berm and over-story vegetation; they separate the corridor from the busy vehicular traffic.

An enclosure by plants and berm.

Separation from the busy street is achieved by earthwork and over-story vegetation. The enclosing vegetation reduces the scale of the space which otherwise extends out

vertically to the top of the tall structure.

CHAPTER 6

Summaries and Generalization

The design of Professor Guenter's residence, Restaurant Yamashiro, and Venice Hongwan-ji purposely mimic as many visual aspects of Japanese gardens as possible with locally available materials, skills and limited spaces. This is because of the users' preference, or because Japanese spatial qualities are needed for the purpose of the space which is associated with Japanese culture.

A lack of enclosure by over-story vegetation is commonly observed in these three designs. Therefore, the spaces are open and bright.

In the design of Yo-ga Promenade, geometric forms of play area furniture and planters express simplicity, while informal shape of planting beds and planting masses express naturalness. Oldness is associated with some of the construction materials used for site furniture.

In the design of Waterfall Garden and Skyline Park, naturalness is experienced in their focal point. The natural feature is delineated in a bold, compact and simple manner. In both designs, rocks and flowing water are the central focus; whether the rocks take natural or abstract forms, they delineate naturalness, and indeed, they evoke a refreshing sensation.

The emphasis of Japanese gardens has always been a visual and spiritual participation of the viewers, while

western contemporary gardens are made for living and oriented toward the activity which takes place within the space. Due to this difference in their purposes and preference of the users, not all of the Japanese garden's spatial qualities are adapted in the design of contemporary outdoor spaces.

The relieving and refreshing quality of Japanese gardens are observed most often in design of contemporary outdoor spaces because the spatial quality fits the character of contemporary spaces; cheerful places for people to socialize and relax. The wabi concept is also often observed in design which responds to the need of being in a quiet space in this fast-paced contemporary world.

Sabi and mystery, on the other hand, tend not to be incorporated into the design concept in most of the designs examined. Mysterious and aged appearance of Japanese gardens are less likely to be adapted in the design of contemporary outdoor spaces. This is because we generally expect contemporary outdoor spaces to be lively and active in nature. While refreshing / relieving, and tranquil qualities are perceived as positive in character, sabi and mystery are perceived as negative and depressing qualities.

CHAPTER 7

Conclusions

As it was described in this research, spatial qualities of Japanese gardens are observed in contemporary landscape despite of the difference in cultural context between Japan and the United States, and that of the pre-modernized age and the modern age.

So as to learn patterns of design, the same analysis undertaken in this research may be also applied to other historical garden designs, such as Moorish gardens and Italian villas. In order to adapt historical designs in contemporary spaces, historical design aspects needs to be put into the present cultural context. The inappropriate aspects need to be discarded, and the appropriate ones need to be modified as necessary. Such modifications are necessary to fit the present cultural context, to fit the design concept, and to need the physical requirements that are defined by the program of a particular project.

However, the uniqueness of the original gardens must not be lost in the process of modification. The designer needs to be sensitive to both the uniqueness of the site and the applied historical design. It is also important to analyze how the site can respond to the uniqueness of the spatial characteristics of the historical design.

This research required thorough observations of each element in a space, and interrelation of the objects. Each

opportunity of observation nourished the author's sensitivity to spatial qualities, and an attention to site details.

Taking this research as a basis, one may investigate what the basic concept which underlies the Japanese garden design. How the basic concept of Japanese gardens may be adapted to the design of contemporary outdoor spaces may be also investigated. It may be suggested to further examine the designers' special considerations and / or design intention in adapting the basic Japanese design concept, or the spatial qualities.

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DEFINITIONS

DESIGN ASPECTS Appearances of objects or/and spaces created by the objects which evoke viewer's perception so that he senses a certain quality of space.

DRY LANDSCAPE GARDENS A type of Japanese gardens originally created and appreciated by Zen priests and disciples for training of minds. It is characterized by absence of water, use of grouped rocks, very few plants and raked sand.

JAPANESE GARDENS Gardens that were created in Japan during the ages of political and geographical isolation, having no western influence on design.

POND GARDENS A type of Japanese gardens which represent imaged Buddhism paradise. One of the earlier types of gardens which were supplementary to architecture.

SABI Unadorned, plain and antique qualities of objects which give impressions of loneliness and melancholy.

SEQUENCE OF SPACES Spaces which unfold one after another as one proceed through, perceiving spaces and objects of only a short distance ahead of him.

A SPACE WITHIN A SPACE A small niche which is expressed by the position of, and relationship between objects within a space. It is visually perceived rather than physically experienced.

ROJI. An alley garden, a narrow Japanese tea house garden transformed from TSUBONIWA. It makes a transition area between the outside world and the space of tea ritual, giving an opportunity for the visitors to be mentally prepared for the ceremony.

SHINTOISM The Japanese indigenous religion which worships natural objects and their creators. It emphasize purity and innocence of minds.

SPATIAL QUALITY An impression of a space which is evoked by qualities of objects in the space, and spaces created within the space by the objects.

TSUBONIWA A pot garden, the original style of tea house gardens. It is a very small enclosed garden which was designed to be viewed from a tea house as a form of art having aesthetic concept of WABI and SABI.

TEA-HOUSE GARDEN A type of Japanese garden which played an important part of the tea ceremony (see also ROJI and TSUBONIWA).

WABI Subtle, clean and simple qualities of objects which give quiet, serene and restrained impressions

ZEN A sect of Buddhism which triggered the creation of dry landscape gardens. Its philosophies involve a strict self-discipline in order to reach the higher state of mind, to come to a realization of relationship between self and the cosmos.

THE ADAPTATION OF SPATIAL QUALITIES OF JAPANESE GARDEN IN
DESIGN OF CONTEMPORARY OUTDOOR SPACES

by

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ABSTRACT

This research illustrates the evolution of the Japanese garden, analyzes its spatial qualities, and examines spatial qualities which are being adapted in design of contemporary outdoor spaces. Visual design aspects and the resulting spatial qualities of Japanese gardens are analyzed and compared with those of contemporary outdoor spaces in which similar qualities are sensed. The design solutions which dealt with the conflict arising from the difference in purpose of Japanese gardens and contemporary outdoor spaces are discussed.